



GEOLOGIC MAP OF THE CALICO PEAK QUADRANGLE, KANE COUNTY, UTAH

by

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T_Em

Unconformity

On cross section only.

CORRELATION OF MAP UNITS Holo-Pleisto-Qmb Qat cene Unconformity Upper part Wahweap Formation Kwl Lower part Ksd Drip Tank Member John Henry Member Striaght Cliffs Formation Unconformity Lower member Kt Tropic Shale Dakota Formation Unconformity Cannonville Member Entrada Sandstone Gunsight Butte Member Upper Carmel Formation Thousand Pockets Tongue Page Sandstone Jcj Judd Hollow Tongue Carmel Formation Unconformity Navajo Sandstone Kayenta Formation Jmo Moenave Formation Unconformity Petrified Forest Member Lower member Unconformity

Moenkopi Formation

Permian Rocks

FORMATION		SYMBOL	OL Feet (Meters)		LITHOLOGY
Wahweap Formation	Upper part	Kwu	1450+ (442+)	350+ (107+)	0 0
	Lower part	Kwl		1100 (335)	
Straight Cliffs Formation	Drip Tank Member	Ksd	1000-1300 (305-396)	200-380 (61-116)	
	John Henry Member	Ksj		500-600 (152-183)	
	Lower member	Ksl		300-380 (91-116)	
Tropic Shale		Kt	570-625 (174-191)		
Dakota Formation		Kd	75-150 (23-46)		
Entrada Sandstone	Cannonville Member	Jec	500-600 (152-183)	350-390 (107-119)	
	Gunsight Butte Mbr	Jeg		150-210 (46-64)	
Upper Carmel Formation		Jcu	490-580 (149-177)		
Thousand Pockets Tongue		Jpt	110-180 (34-55)		
Judd Hollow Tongue		Jcj	45-100 (14-30)		
Navajo Sandstone			1350-1450 (411-442)		
Kayenta Formation		Jk	200-33	5 (61-102)	
Moenave Formation		Jmo	200-30	0 (61-91)	***************************************
Chinle Formation	Petrified Forest Member	Tic	500-700		
	Lower member	Ticl	(152-213)		

MAP SYMBOLS

Syncline

CONTACT—Dashed where inferred or approximately located.

FAULT — Dashed where inferred or approximately located, dotted where covered; bar and ball on downthrown side; dip indicated.

STRIKE AND DIP OF BEDS

FOLD—Showing trace of axial plane and plunge of axis; dashed where approximately located.

Anticline

LANDSLIDE BLOCK BOUNDARY—Dashed where approximately located.

DESCRIPTION OF MAP UNITS

Fluvial and eolian deposits

Qa Alluvium — Mostly channel, terrace and floodplain deposits of fine to coarse sand and silt, crudely stratified, with lenses of pebbles and cobbles; active channels contain numerous scattered cobbles and boulders; 0 to 40+ feet thick.

Older terrace gravel deposits — Cobbles and pebbles of quartzite, siliceous limestone, and volcanic rocks in a sandy matrix transported to the quadrangle by the major streams and deposited at several elevations above the present streams.

Eolian sand deposits — Fine sand of mixed eolian and subordinate alluvial origin deposited on ridges, benches, and hollows of bare rock sandstone areas, mostly derived from the Navajo Sandstone.

Mass movement deposits

Qmr Rockfall deposits — Angular, mostly sandstone rubble at the foot of cliffs or in narrow steep walled canyons, largest fragments are as much as 35 feet in diameter, only the most recent large deposits are mapped.

Talus deposits — Small angular rock fragments and sand and shale debris derived from the Dakota that form a covering veneer on the steep slope of the Cannonville Member of the Entrada Sandstone along hogbacks of the Cockscomb, 1-2 feet thick.

Block landslide deposits — Rock masses that have slid down steep slopes without disintegrating along the Cockscomb, mostly of the Judd Hollow Tongue of the Carmel Formation and the lower member of the Straight Cliffs Formation.

Undifferentiated mass-movement deposits — Mostly mixed rockfall and debris flow deposits that veneer the slopes of the Petrified Forest Member of the Chinle Formation; composed of large angular blocks of Moenave and Kayenta sandstone in a matrix of sandstone gravel and sand; many blocks are 15 to 20 feet thick.

Wahweap Formation — Interbedded sandstone and mudstone; sandstone is yellowish-gray, light brown, or olive gray, fine to medium grained, and ledge and cliff-forming; mudstone is olive green or olive gray, sandy, and slope-forming. Upper part (Kwu) is dominantly thick sandstone lenses with local conglomeratic lenses that form steep cliffs; lower part (Kwl) is less resistant and forms a steep slope beneath the cliff. Upper part is 350+ feet thick whereas the lower part is about 1100 feet thick.

Straight Cliffs Formation — Interbedded sandstone, gray shale, carbonaceous mudstone, claystone, and coal. Sandstone is grayish orange, yellowish gray, or yellowish brown, very fine to coarse grained, thinbedded to massive, and cliff or ledge-forming; the other rock types are slope-formers. The Drip Tank Member (Ksd) is dominated by thick to massive sandstone lenses, forms cliffs, and is 200 to 380 feet thick. The John Henry Member (Ksj) forms a steep slope beneath the Drip Tank cliffs, 500 to 600 feet thick. The John Henry is separated from the lower member by a regional unconformity. The lower member (Ksl) has thick sandstone cliff-forming beds top and bottom with alternating hard and soft units between 300 to 380 feet thick. The middle part of the lower member contains thin discontinuous coal beds.

Kt Tropic Shale — Drab medium gray slope-forming marine shale with thin beds of olive-gray and light-brown, very fine-grained sandstone in the upper 50 feet; 570 to 625 feet thick.

Dakota Formation — Interbedded gray mudstone, carbonaceous shale, yellowish-gray to brown fine- to coarse-grained sandstone, claystone, and thin coal beds, upper beds resistant and form a prominent hogback: 75 to 150 feet thick.

Jec Entrada Sandstone — White or light-greenish-gray sandstone, fine- or very fine-grained in two members: Cannonville Member (Jec) is mostly slope and badlands forming and lightly banded with vermilion, maroon, or light brown, 350-390 feet thick; Gunsight Butte Member (Jeg) forms resistant monolithic outcrops that weather yellowish tan, 150 to 210 feet thick. Total Entrada Sandstone is 500 to 600 feet thick.

Upper Carmel Formation — Mostly brightly colored, but poorly exposed very fine- to fine-grained sandstone, siltstone, and limestone, 490 to 580 feet thick: Winsor Member is color banded muddy sandstone that forms badlands, thicker to the north, 320 to 260 feet; Paria River Member is generally reddish, ledge and slope-forming with a 15 to 20 foot pinkish gray chippy limestone at top to north and a 100 foot white and massive eolian sandstone at top to south, thicker to south; 130 to 260 feet thick.

Thousand Pockets Tongue of Page Sandstone — White to pale pink, fine-to coarse-grained eolian sandstone, massive cliff-former, divided by a thin (11 to 29 foot) reddish siltstone and sandstone Carmel Formation tongue 30 to 40 feet above the base; 110 to 180 feet thick.

Judd Hollow Tongue of Carmel Formation — Reddish interbedded ledge and slope-forming fine- to medium grained sandstone, siltstone, and mudstone with subordinate lavender-gray resistant limestone to the south and tan-gray resistant limestone and limestone shale with subordinate reddish soft sandstone, siltstone and mudstone to the north, forms flatirons on dipping Navajo Sandstone; 45 to 100 feet thick.

Jn Navajo Sandstone — White to pale pink, fine- to coarse-grained eolian sandstone with sets of sweeping high angle crossbeds etched out by weathering, massive, forms bare rock outcrops as monoliths, domes, spires, arches, and great massive monuments, cliff-forming feature is enhanced in upper 350 to 450 feet and in lower 100 to 250 feet; 1350 to 1450 feet thick.

Jk

Kayenta Formation — Mostly reddish-brown to white fine-grained sandstone lenses, in thick to massive beds, that form step-like ledges and
cliffs with subordinate thinner siltstone, mudstone, clay-pellet conglomerate, and limestone beds; 200 to 335 feet thick.

Jmo

Moenave Formation — Pale- to moderate-reddish-orange, fine- to very fine-grained thin to thick and sometimes massive planar sandstone beds, with reddish mudstone or siltstone partings and thin interbeds, generally forms a vertical cliff and regularly displays ripple marks and sand filled dessication cracks; 200 to 300 feet thick.

Chinle Formation — Mostly colorfully banded mudstone containing interbeds of brown nodular limestone, muddy gray gritstone or coarsegrained sandstone, siltstone, and claystone, forms a steep, smoothappearing slope or badlands with weathered surfaces veneered with bentonitic mud (Petrified Forest Member, Fic); at base is crudely stratified, nearly white pebbly to gritty coarse-grained sandstone with a few interbeds of gray silty mudstone or siltstone (Monitor Butte Member, Ficl), total unit is 500 to 700 feet thick and incompletely exposed in the quadrangle.

Moenkopi Formation — Not exposed on quadrangle, but shown on crosssection; underlies Chinle Formation unconformably, mostly reddishbrown fine grained sandstone, brown siltstone, and gypsum, with a very resistant limestone member (Timpoweap Member) at the base, about 1,000 feet thick.

Permian Rocks — Not exposed on quadrangle, but shown on crosssection; in descending order, Kaibab Formation, Toroweap Formation, Hermit Shale, Queantoweap Sandstone, and Pakoon Formation; about 2,200 feet thick.

